

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	9	((("3674621") or ("4398995") or ("5883807"))).PN.	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	OFF	2006/05/12 12:40
L2	9	((("3674621") or ("4398995") or ("5833807"))).PN.	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	OFF	2006/05/12 12:40
L3	123	aramid near2 fib\$4 same cellulosic near2 (pulp fib\$4) and (binder adhesive glue bond\$4)	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	ON	2006/05/12 12:48

## EAST Search History

L4	39	3 and (polyvinyl adj alcohol PVA PVOH)	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	ON	2006/05/12 12:43
L5	26	4 and @ay<="2002"	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	ON	2006/05/12 12:46
L6	84	3 and @ay<="2002"	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	ON	2006/05/12 12:46

## EAST Search History

L7	58	6 not 5	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	ON	2006/05/12 12:46
L8	123	(aramid near2 fib\$4 same cellulosic near2 (pulp fib\$4)) and (binder adhesive glue bond\$4)	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	ON	2006/05/12 12:48
L9	42	8 and ("162"/\$7 "428"/\$7).ccls.	US-PGP UB; USPAT; USOCR; EPO; JPO; DERWE NT; IBM_T DB	OR	ON	2006/05/12 12:49


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## Web

 Results 1 - 10 of about 142 for **aramid fibrid**. (0.34 seconds)

 Did you mean: [aramid \*fibre\*](#)

### NIPPON RIKA KOGYOSHO CO.,LTD.

KMF-805A, **Aramid fibrid** mixed uncalcined Muscovite, PET film, Epoxy, Dry tape ... AMF, Phlogopite, **Aramid fibrid** mixed. KM, Uncalcined Muscovite ...

[www.nrk-nipponrika.co.jp/mica/index.html](http://www.nrk-nipponrika.co.jp/mica/index.html) - 22k - [Cached](#) - [Similar pages](#)

### Molded **aramid** sheets - Patent 5998309

The present invention provides a colored m-**aramid fibrid**. This **fibrid** may be used in the formation of **aramid** sheet products and molded parts to provide ...

[freepatentsonline.com/5998309.html](http://freepatentsonline.com/5998309.html) - 50k - [Cached](#) - [Similar pages](#)

### Glazed paper webs Number:6998019 from the United States Patent and ...

Aromatic polyamide (**aramid**) paper is made on a fourdrenier paper machine from 0.25 inch long by 2 denier **aramid** fibers and **aramid fibrid**. ...

[www.linkgrinder.com/Patents/Glazed\\_paper\\_we\\_6998019.html](http://www.linkgrinder.com/Patents/Glazed_paper_we_6998019.html) - 57k -

[Cached](#) - [Similar pages](#)

### The Society of Rheology: 72nd Annual Meeting (Feb 2001) Paper SC28

**Aramid fibrid** (platelet) suspensions have unusual "space-filling" structures with power law indices as low as 0.2 and viscosity enhancement factors of ...

[www.rheology.org/sor012/abstract.asp?PaperID=97](http://www.rheology.org/sor012/abstract.asp?PaperID=97) - 7k - [Cached](#) - [Similar pages](#)

### US 6921459 B2 Process for making a sheet of **aramid** fibers using a ...

Process for making a sheet of **aramid** fibers using a foamed medium ... non-woven fibrous web comprised of **aramid** fibers, and **aramid fibrid**, which comprises: ...

[www1.uspto.gov/web/patents/patog/week30/OG/html/1296-4/US06921459-20050726.html](http://www1.uspto.gov/web/patents/patog/week30/OG/html/1296-4/US06921459-20050726.html)

- 5k - [Cached](#) - [Similar pages](#)

### Process and apparatus for making a sheet of **aramid** fibers using a ...

The present invention relates to a method for forming a non - woven fibrous web comprised of **aramid** fibers and **aramid fibrid** which comprises forming a foam ...

[www.freshpatents.com/Process-and-apparatus-for-making-a-sheet-of-aramid-fibers-using-a-foamed-medium-dt20...](http://www.freshpatents.com/Process-and-apparatus-for-making-a-sheet-of-aramid-fibers-using-a-foamed-medium-dt20...) - 22k - Supplemental Result - [Cached](#) - [Similar pages](#)

[Cached](#) - [Similar pages](#)

### [PDF] Advanced Technology of Stator Winding Insulation System for UV ...

File Format: PDF/Adobe Acrobat

volume of aromatic polyamide **fibrid** (**aramid fibrid**) has been. developed ... components when combusted, instead of **aramid fibrid**, ...

[ieeexplore.ieee.org/iel4/5934/15805/00732964.pdf?arnumber=732964](http://ieeexplore.ieee.org/iel4/5934/15805/00732964.pdf?arnumber=732964) - [Similar pages](#)

### Product Details

A molded part having improved color uniformity made from an **aramid** sheet comprising m-**aramid** fibrids and short fibers wherein the m-**aramid fibrid** contains ...

[chemi-tek.com/prod\\_mostra.asp?pid=18432](http://chemi-tek.com/prod_mostra.asp?pid=18432) - 23k - Supplemental Result -

[Cached](#) - [Similar pages](#)

### Burn through and flame propagation resistant layer or covering ...

The sheet of burn through barrier paper 22 includes aromatic polyamide (**aramid**) fibers, mica flakes and aromatic polyamide (**aramid**) **fibrid** binder. ...

[www.freepatentsonline.com/6627561.html](http://www.freepatentsonline.com/6627561.html) - 67k - [Cached](#) - [Similar pages](#)

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### Activated carbon-containing fibrids - US Patent 5482773

A non-shedding sheet structure consisting essentially of **aramid** fibrids, ... and causes the polymer to precipitate as **fibrid** structures encapsulating the ...

Did you mean to search for: aramid *fib*re

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Types of Nomex: [410] [411] [414] [416&464] [418] [419] [E-56] [E196] [992] [993] [994]

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## Specific Product Information & Principal Uses For Each Thickness & Type

### NOMEX® Brand paper

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#### Commercial types:

##### Type 410- The Original and most-used type of calendered paper



Available in 11 thicknesses from 2 through 30 mils (0.05 through 0.76 mm)- serves almost all electrical end uses for NOMEX® aramid paper - good properties in all categories. Comprises over 80% of total paper sales volume for NOMEX® aramid paper in electrical insulation markets. Has very low porosity due to the highly calendered surfaces, but 2 mil (0.05mm) and 3 mil (0.08 mm) grades can be impregnated with oils and resins in a relatively short time. All grades 7 mils (.18 mm) and thicker meet UL Standard 94V-O.

**2 mil (0.05 mm)-** used for magnet wire wrap for large transformers or for laminating for motor slot liners. Usually used in multiple layers such as overlapped on wire. Occasionally used for layer insulation in very small transformers where small wire needs very flexible insulation and voltages are low between layers. Also used as a substrate for pressure-sensitive tape, for creping, laminating, etc.

**3, 5, 7 mil (.08, .13, .18 mm)-** used for many applications, but major uses are layer insulation in transformers, laminating especially 3 mil (.08 mm), and 7 mil (.18 mm) paper is also used as slot liner in small motors. It is also used for magnet wire insulation in some high-performance designs.

**10 mil (.25 mm)-** used in many designs of transformers, and the largest volume sales product in the NOMEX® aramid paper line of products. Also used as slot liners in a range of AC and DC motors. Other uses include unvarnished barriers in electronic equipment, made possible by its excellent flame resistance and good cut-through resistance.

**12 and 15 mil (.30 and .38 mm)-** Motor slot liners and phase insulation, core, layer, and barrier insulation in large transformers, high voltage barriers in switchgear, etc.

**20 mil (.51 mm)-** Slot liners and phase insulation in large rotating equipment, preformed wedges for small motors, core, layer, and barrier, tap and lead insulation for large transformers. End laminations for motors.

**24 and 29 mil (.61 and .74 mm)-** Usually used for preformed wedges in medium-sized electric motors. Sometimes used for phase insulation in large motors. Relatively expensive to buy due to high density and high stiffness resulting from heavy calendering. Somewhat brittle for the same reason- will crack if bent sharply when dry, so it is generally hot-formed.

**30 mil (.76 mm)-** Widely used in large high-voltage transformers as core, barrier, tap and lead insulation and sometimes as end filler. The same weight as 29 mil but more flexible and resilient. Preferred for uses other than

wedges.

**Standard Width : 914 mm (36")**

Thickness	Initial Tear Strength		Tensile Strength		Approximate Length		Net Weight	Dielectric Breakdown Volts
	lbs		lbs/in		11-1/2" OD			
Inches	Machine	Cross	Machine	Cross	Meter	Lineal Yds.	Kgs(Approx.)	
0.002	1.3	2.5	25	10	1150	1250	42	950
0.003	1.9	3.5	40	20	770	840	45	1730
0.005	3.6	7.3	80	40	440	480	46	3350
0.007	5.6	11.0	130	65	320	350	51	6150
0.010	9.2	16.0	175	85	240	260	54	8250
0.012	11.4	21.0	220	115	183	200	52	10330
0.015	16.0	26.0	275	150	155	170	56	12400
0.020	2401	36.4	375	215	120	130	60	16100
0.024	32.9	42.0	470	305	101	110	64	19800
0.029	38.5	46.8	535	380	82	90	.	21700
0.030	43.0	54.1	520	350	82	90	61	21300

**Type 411- Uncalendered aramid paper**

Has a few specialized uses, but weak physical properties restrict its sales. Prices under half of that of Type 410. Available in 5 thicknesses from 5 mil to 23 mils (0.13 to 0.58 mm). Uncalendered, soft, low strength. Highly saturable to resins, varnishes, and oils, and this greatly improves the electrical strength. Thermally equivalent to Type 410.

**5 mil (0.13 mm) and 7 mil (0.18 mm)-** used as layer insulation in fairly large transformers. The principal uses are as precursors for 2 and 3 mil Type 410, respectively. Fair absorbency, but low physical strength, low dielectric strength, and low cut-through resistance limit uses. Thermally excellent, offering excellent value in uses not requiring high physical properties.

**10 mil (0.25 mm) and 15 mil (0.38)-** Used for layer insulation in medium-sized transformers, punched parts, and shunt insulation in small ferroresonant transformers. As in the case of 5 and 7 mil, lower properties limit uses, but lower price often results in excellent value.

**23 mil (0.58 mm)-** Thickest grade of Type 411, mostly used in transformers as layer insulation or end filler. The basis weight is high enough that physical properties are fairly good despite lack of calendering.

**Standard Width : 965mm (38")**

Thickness Inches	Initial Tear Strength		Tensile Strength		Approximate Length		Weight Kgs (approx.)	Dielectric Breakdown
	lbs.		lbs./in.		11-1/2"OD			Volts
	Machine	Cross	Machine	Cross	Meter	Lineal Yds.		
0.005	0.6	1.2	10	5	530	580	20	1250

0.007	0.9	1.7	15	8	350	380	21	1900
0.010	1.2	2.2	18	10	260	290	20	2550
0.015	2.1	3.4	27	16	165	180	21	4250
0.023	3.5	4.7	32	22	90	100	18	6000

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#### **Type 414- Most "conformable" grade of calendered aramid paper**

Like Type 410 but "tougher", less stiff. Intended originally for motor slot liner, but also good for transformers due to easy wrapping, better varnish adhesion than Type 410. Available in 5 thicknesses from 3.4 to 15 mils (0.09 to 0.38 mm). More absorbent than Type 410.

**3.4 mil (0.09 mm)**- Used almost exclusively as linear wrap on conductor in field coils for starter motors in automobile engines. This was a specially-developed product for this use, tougher than 3 mil Type 410, and no other important uses have developed. However, it has been adopted for wire wrap in distribution transformers in Europe, and this use in growing. It is also used in certain NMN laminate constructions.

**7 mil (0.18 mm), 10 mil (0.25 mm), 12 mil (0.30 mm), and 15 mil (0.38 mm)**- These grades were developed to meet the need for "tougher" slot liners, and are still largely used for that purpose. However, they also have better surface adhesion to resins, and therefore have found some use in transformers, particularly where less stiffness is desirable.

**Standard Width : 914 mm (36")**

Thickness Inches	Initial Tear Strength		Tensile Strength		Approx. Length		Weight Kgs. (Approx.)	Dielectric Breakdown
	lbs.		lbs./in.		11-1/2"OD			Volts
	Machine	Cross	Machine	Cross	Meter	Lineal Yds.		
0.0034	2.2	4.4	30	15	658	720	51	1950
0.007	5.0	10.8	100	50	320	350	51	5300
0.010	7.7	16.0	140	70	238	260	54	7850
0.012	9.4	21.0	175	85	183	200	51	9600
0.015	12.5	25.0	215	115	155	170	55	11750

---

#### **Type 416 & 464- Special aramid products for laminates**

Special grades sold only for laminating (not sold through distributors except in laminated form) for motor slot liners and similar uses. Available in 3 thicknesses from 2 to 5 mils (0.05 to 0.13 mm). Lower thermal rating, special preparation and marking for laminating.

**2 mil (0.05 mm), 3 mil (0.08 mm), 5 mil (0.13 mm)**- All these grades are sold only to laminators, and the products are intended to be used in NMN laminates for motor slot liner and phase insulation, competing with DMD laminates or CMC (glass/polyester film) laminates. The temperature tolerance is inferior to T-410 but physical properties are generally similar. Because it is always used in laminates, defects are not patched, even pinholes, and property limits are lower. Price can therefore be less than Type 410 and other top-quality papers.

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### **Type 418- Calendered aramid paper with mica for highest performance**

Best electrical and flammability properties, with premium price due to mica content. Intended for high-voltage equipment where corona is a serious problem, but also offers outstanding flame resistance due to 50% mica content.

Available in 5 thicknesses from 3 to 14 mils (0.08 to 0.36 mm). Fairly absorbent to resins, varnishes, and oils.

**3 mil (0.08 mm)**- Used for high-voltage wire wrap in certain special high-voltage dry-type, usually gas-filled, transformers.

**5 mil (0.13 mm) and 8 mil (0.21 mm)**- Used for wire and coil insulation in high-voltage form-wound motors. Also, they are used in some high-voltage transformers, such as microwave oven power suppliers.

**10 mil (0.25 mm)**- Mostly used for layer and outer insulation for small high-voltage transformer, such microwave ovens and high-intensity discharge (HID) lighting transformers.

**14 mil (0.35 mm)**- Used for coil wrapper in microwave oven transformers.

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### **Type 419- Uncalendered paper with mica**

Uncalendered precursor for Type 418, available in 2 thicknesses - 7 and 13 mils (0.06 to 0.33 mm). Highly saturable, with good voltage endurance. Weak physical properties limit its use.

#### **Standard Width : 914mm (36")**

Standard Width : 24mm (50')

Type	Thickness Inches	Initial Tear Strength		Tensile Strength		Approx. Lenght		Weight  Kgs. Approx.	Dielectric Breakdown
		lbs.		lbs./in.		11-1/2"OD			Volts
		Machine	Cross	Machine	Cross	Meter	Lineal Yds.		
418	0.003	0.8	1.8	18	12	613	670	50	2500
418	0.005	1.7	3.0	31	23	439	480	59	4450
418	0.008	2.9	5.4	53	38	293	320	62	8100
418	0.010	3.7	7.0	65	48	229	250	62	10200
418	0.014	4.8	8.5	85	58	146	160	51	12900
419	0.007	0.6	0.3	11	7	329	320	26	2275
419	0.013	1.2	0.8	17	12	192	160	26	4225

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### **Type E-56- Medium-density calendered aramid paper** (An experimental grade of NOMEX® paper)

This newer smooth, calendered, medium-density NOMEX® has been developed in thickness from 5 through 20 mils (0.13 through 0.51 mm) as a less-expensive alternative to Type 410 where properties between those of T-410 and T-411 are needed. The price is approximately 30% less than Type 410, while the calendered properties of E-56A are adequate for many layer insulation uses.

**5, 7, 10, 12, 15, and 20 mils (.13, .18, .25, .30, .38, .51 mm)**- intended for layer insulation and similar less-demanding areas where Type 410 may be more than is needed but Type 411 properties are not adequate. Can be laminated for motor use. Acceptable in all UL-Recognized insulation systems on a dielectric strength substitution basis for Type 410 or as otherwise included through specific testing.



## Type E-196 Saturable NOMEX®

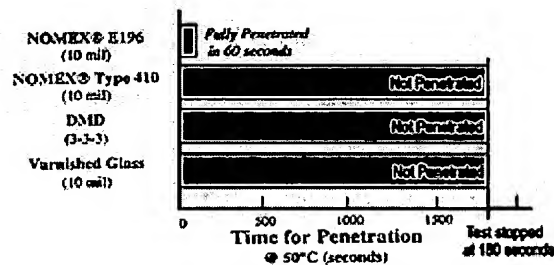
NOMEX® E196 paper provides the unique combination of two properties; **Saturability** and the **Stiffness** of a paper structure. Resins quickly penetrate the paper, providing a fully saturated structure in a short period of time. Unlike saturable fabric materials, NOMEX® E196 is a stiff, mechanically tough paper. And, NOMEX® E196 is made from the NOMEX® ingredients found in our commercially available papers, so it exhibits the similar long term thermal stability.

### *Benefits as Motor Phase Insulator:*

1. Resins quickly penetrate and pass through the phase paper to allow quicker resin coverage  
of motor end-turns.
2. Resins fully penetrate the structure, helping form a more cohesive bond between motor  
end-turns.
3. The stiff structure is quickly and easily inserted between phases.
4. Mechanical toughness helps assure integrity during motor assembly.
5. Long term thermal stability assures phase separation and motor reliability.

### *Comparative Penetration Testing:*

NOMEX® E196 allows resins to quickly penetrate through its structure. Typical insulating material don't allow penetration at all. Comparative testing of polyester based trickle resin penetration demonstrates the advantage of NOMEX® E196. (ASTM D202)



## NOMEX ® Brand PAPER - TYPE E196

### Typical Properties

Nominal Thickness, (mils)	1.5	2	3	5	10	15
Typical Thickness, (mils)	1.49	2.38	3.66	4.45	10.20	16.80
Basis Weight, (opsy)	0.59	1.19	1.92	2.71	6.21	9.28
Density,						

(g/cc)	0.53	0.61	0.70	0.84	0.82	0.74
<b>Tensile Strength, (lb/in)</b>						
<i>MD</i>	5.20	22.70	22.40	41.50	61.20	71.70
<i>XD</i>	4.50	8.10	17.00	37.80	75.50	72.80
<b>Elongation, (%)</b>						
<i>MD</i>	3.50	8.60	5.20	10.10	6.60	4.10
<i>XD</i>	3.70	3.80	6.10	9.20	6.50	3.80
<b>Initial Tear Strength, (gms)</b>						
<i>MD</i>	1.00	3.30	4.30	5.90	10.90	16.20
<i>XD</i>	0.90	1.60	3.10	5.70	12.90	16.20
<b>Elmendorf Tear Strength, (gms)</b>						
<i>MD</i>	108	141	420	630	1620	NA
<i>XD</i>	127	204	503	648	1391	NA
<b>Modulus, (kpsi)</b>						
<i>MD</i>	187	350	293	344	226	NA
<i>XD</i>	148	160	217	325	296	NA
<b>Surface Strength, (lbs)</b>	3.00	3.40	4.40	4.80	7.50	NA
<b>Dielectric Strength, (v/mil)</b>	205	242	181	191	133	140
<b>Gurley Porosity, (Seconds)</b>	0.14	23.20	NA	61	28	NA

### Type 910-

New thin, high-fibrid 100%- aramid product designed for magnet wire or foil-conductor insulation in liquid-immersed transformers. It is available only in 1.5 mil thickness. It is strong and tough enough to tape at high speeds, can be impregnated fairly easily, and is intended to compete with Kraft paper and high-temperature wire enamels. Because the end use does not require it, Type 910 has not been submitted for testing by UL, but DuPont data indicate a Relative Thermal Index of 180 ° C (100,000 hour life to 50% of initial properties).

**1.5 mil (0.038 mm)**- specially formulated for high dielectric and physical strength, with improved smoothness for magnet wire insulation in liquid-immersed small power and distribution transformers up to 69kV. Strong enough to tape at high speeds, and features high, nearly non-aging dielectric properties at allowable temperatures in mineral oil, silicone fluid, or other dielectric fluids. Allows smaller transformers with reduced cooling ducts and higher current densities. Improved space factors and economical application to large wires makes it competitive with Kraft paper and enamels in many uses.

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## NOMEX® brand pressboard

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### Type 992-

Low density pressboard, mostly used for heat shields. Available in two thicknesses- 63 and 125 mils (1.6 and 3.2 mm). Saturable, and can also be used for core tubes and end filler for transformers.

**63 and 125 mils (1.6 and 3.2 mm)-** Lowest density pressboard, used for heat shields in automotive applications and for end laminations in motors. It is also used in cylinders for dry-type transformers.

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### Type 993-

Medium density pressboard, comparable in many properties to Type 410 paper. Available in thicknesses from 35 to 240 mils (1 to 6 mm). Used in many electrical uses, including motor laminations, lifting magnet discs, and transformer disc insulators.

Thickness from **35 mils (.87 mm) to 240 mils (6 mm)-** Medium-density pressboard, used for disks and formed parts in oil-filled transformers.

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### Type 994-

Highest density pressboard, available in thickness from 40 to 380 mils (1 to 9.6 mm). Used for radial and axial spacers, high-voltage insulation parts of all kinds for large oil-filled transformers. Can be machined to shape. Patented due to high performance when oil-impregnated.

Thickness from **40 mils (1 mm) to 380 mils (9.6 mm)-** Highest-density pressboard, used for radial and axial spacer sticks in large oil-filled transformers, plus other critical uses. Patented.

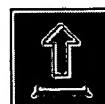
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**Types of Nomex: [410] [411] [414] [416&464] [418] [419] [E-56A] [E196] [992] [993] [994]**

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[Back to Main Page](#)



[Back to NOMEX Web Page](#)

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**P. LEO**

## Mica



Mica paper based tapes and sheets ■

Mica splittings based tapes & sheets ■

Mica plates ■

Mica papers ■

Mica laminate based products ■

## Mica paper based tapes and sheets

Mica paper based tape/ sheet is a tape/ sheet with one of various backing materials attached to one or both of the sides of the mica paper by means of a heat-resistant adhesive.

- It is extremely even in thickness.
- It excels highly in flexibility and windability and facilitates coil taping.
- It excels in electrical characteristics and is used mainly in high-voltage motors, generators and other equipment.

Mica paper, the main material for this product, comes in various types, including Phlogopite, calcined Muscovite, uncalcined Muscovite, along with a type containing Aramid fibril, one containing glass chop, one containing polypropylene pulp, and one containing polyethylene pulp, thus meeting diverse customer needs.

### 1. Mica tape for conductor insulation

Symbol	Construction			Remarks
KM-805A-ST	Uncalcined Muscovite	PET film	Epoxy	Dry tape
KMF-805A-ST	Aramid fibril mixed Uncalcined Muscovite	PET film	Epoxy	Dry tape
KMP-801A-ST	PP pulp mixed Uncalcined Muscovite	PET film	-	Dry tape Hot press laminated type

### 2. Mica tape for ground insulation

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Symbol	Construction			Remarks
KM-805G	Uncalcined Muscovite	Glass cloth	Epoxy	Dry tape
KM-805A	Uncalcined Muscovite	PET film	Epoxy	Dry tape
KMF-805A	Aramid fibril mixed uncalcined Muscovite	PET film	Epoxy	Dry tape
KMF-805G	Aramid fibril mixed uncalcined Muscovite	Glass cloth	Epoxy	Dry tape
RMG-805A	Glass chop mixed calcined Muscovite	PET film	Epoxy	Dry tape
RMF-853A	Aramid fibril mixed calcined Muscovite	PET film	Epoxy	Prepreg type

### 3. Mica tape for fire-resistant cables

Symbol	Construction			Remarks
AM-864G	Phlogopite	Glass cloth	Silicone	
AM-806PE	Phlogopite	PE film	Silicone	
AME-806PE	Phlogopite mixed with PE pulp	PE film	Silicone	Hot-press laminated type

### 4. Other products

- Mica compound for transposition filler
- Semi-conductive tape for corona shield
- Conductive tape for corona shield

## Mica splittings based tapes & sheets

Mica splittings based tape / sheet is a tape/ sheet made with mica splittings of Muscovite or Phlogopite by mechanical lay-up process or hand lay-up process, reinforced with various backing materials on one or both of the sides by means

U.S. Application #



Applications for inventor: KINSLEY JR., HOMAN B.

Phx	App Num	Patent Num	Status	Date Filed	Inventor Name	Title
1	08/829313	161		03/31/1997	KINSLEY JR., HOMAN B.	FIBER SHEET AND METHOD ...
2	09/534399	161		03/24/2000	KINSLEY, HOMAN B.	Use of cotton fibers in filter pa...
3	09/950642	163		09/13/2001	KINSLEY, HOMAN B.	Metal fiber sheet and method of ...
4	09/963847	5517675	150	10/26/2001	KINSLEY, HOMAN B.	METAL FIBER/METAL ...
5	09/983863	5540875	150	10/26/2001	KINSLEY, HOMAN B.	A UNIFORM METAL FIBER ...
6	10/116893	5682215	150	04/10/2002	KINSLEY, HOMAN B.	PROCESS AND APPARATUS F...
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9	10/455332		098	06/06/2003	KINSLEY, HOMAN B.	LOW WATER PAPER
10	10/657133	6998019	150	09/09/2003	KINSLEY, HOMAN B.	GLAZED PAPER WEBS
11	10/657134	6921459	150	09/09/2003	KINSLEY, HOMAN B.	PROCESS FOR MAKING A SH...
12	10/657183		040	09/09/2003	KINSLEY, HOMAN B.	High temperature paper containin...
13	11/188119		020	07/25/2005	KINSLEY, HOMAN B.	Process and apparatus for m...
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18	60/362386		159	03/08/2002	KINSLEY, HOMAN B.	Medical electrode comprised of m...
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20	60/362446		159	03/08/2002	KINSLEY, HOMAN B.	EMIRFI use of metal fiber web
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22	60/362542		159	03/08/2002	KINSLEY, HOMAN B.	Non-woven web comprising met...
23	60/362543		159	03/08/2002	KINSLEY, HOMAN B.	Sacrificial metal fiber web
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25	60/409186		159	09/10/2002	KINSLEY, HOMAN B.	Glazed aramid paper
26	60/409187		159	09/10/2002	KINSLEY, HOMAN B.	Nonwoven fiber webs with poly ...
27	60/409229		159	09/10/2002	KINSLEY, HOMAN B.	Glazed paper web
28	60/409230		159	09/10/2002	KINSLEY, HOMAN B.	High temperature naner containin...



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59		08/103134	5498314	150	08/09/1993	KINSLEY, HOMAN B.	PROCESS FOR MAKING A PA...
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71		08/022900		161	02/26/1993	KINSLEY, HOMAN B.	PROCESS AND AGITATOR FO...
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☞ Docket: JOSE-FORTUNA--05/17/2006-10:09:32 | ☞ \*-10657183-FORTUNA-JOSE-(1731)-NPL... | ☞-TOC--10657183-FORTUNA-JOSE-(1731)-... | ☞ Applications for inventor: KINSLEY-JR., HOMA...

of a heat-resistant adhesive. It is mainly used for DC equipment and excels in electric characteristics.

Product number	Construction			Thickness
RF753CG	Muscovite	Glass cloth PET fleece	Epoxy	0.18-0.30mm
RF852G	Muscovite	Glass cloth	Epoxy	0.10-0.25mm
RF861G	Muscovite	Glass cloth	Silicone	0.10-0.25mm



## Mica plates

Mica splittings based plate excels particularly in mechanical characteristics, not only in electrical properties like dielectric strength and corona resistance. It has long been used for commutator cones, segments and other products.

### Mica splittings based plates

Symbol	Construction		JIS	Application
RF131	Muscovite	Shellac	MC13	Molding use
RF155	Muscovite	Epoxy	MC15	Molding use
RF165	Muscovite	Silicone	MC16	Molding use
RF331	Phlogopite	Shellac	MA33	Commutator separator
RF353	Phlogopite	Epoxy	MA35	Commutator separator
RF432	Muscovite or Phlogopite	Alkid	MC43	Punching use
RF455	Muscovite or Phlogopite	Epoxy	MC45	Punching use
RF465	Muscovite or Phlogopite	Silicone	MC46	Punching use
RF642	Muscovite	Alkid	MC64	Flexible
RF652	Muscovite	Epoxy	MC65	Flexible
RF661	Muscovite	Silicone	MC66	Flexible



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## Mica papers

Mica paper is produced from thin and fine flakes of good-quality raw mica.

AM	Phlogopite
AMF	Phlogopite, Aramid fibril mixed
KM	Uncalcined Muscovite
KMF	Uncalcined Muscovite, Aramid fibril mixed
KMP	Uncalcined Muscovite, PP pulp mixed
RM	Calcined Muscovite
RMF	Calcined Muscovite, Aramid fibril mixed
RMG	Calcined Muscovite, Glass chop mixed

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Top

## Mica laminate based products

Mica splittings based products and mica paper based products are processed to meet customer needs.

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